Canadian Centre for Occupational Health and Safety

Centre canadien d'hygiène et de sécurité au travail

RADIO HEADSETS IN THE WORKPLACE

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This publication was prepared as a source of information for health and safety committees and others with an interest in understanding and reducing occupational risks associated with the use of radio headsets in the workplace.

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1. INTRODUCTION

Radio headsets, also called sound headsets, personal portable radio units, tape headsets, or often by the trade name, "Walkman," have become common in Canadian workplaces. They allow the user to listen to music or the radio anywhere without disturbing others nearby.

In the workplace, listening to music can provide the worker with mental stimulation while doing monotonous tasks. On the other hand, radio headsets create occupational health and safety hazards when used improperly or in the wrong situation.

The main health and safety concerns about using radio headsets in the workplace include distraction from warnings, inability to hear and hearing damage.

Radio headsets are designed for listening. They do not provide any protection against workplace noise, and they are not substitutes for personal hearing protection. The wearing of a radio headset may actually deter a worker from wearing hearing protection.

2. WHAT SAFETY HAZARDS DO RADIO HEADSETS CREATE?

Radio headsets set at high volume levels make it impossible to hear some sounds. Wearing a radio headset prevents the worker from hearing important information, such as messages, signals, critical equipment sounds and alarms. Anyone unable to hear such warnings is more likely to have an accident. Wearing a headset is particularly hazardous around moving equipment such as forklifts, hand trucks, and automated devices such as conveyors and robots.

It is important that an emergency warning gets the worker's attention and that the worker recognizes and understands it.

While listening to the radio headset, a worker's attention can be drawn away from job operations. The distracted worker can miss the usual sound cues or sounds that warn of danger. When either noise or music interfere with hearing warning sounds, an accident or injury may result.

Normal speech between two workers three feet apart is possible when sound levels are less than 75dB. Under favourable conditions, communication may be still possible up to a level of 85dB. But levels above these, whether noise or music, hinder the workers' ability to hear speech. There is a greater likelihood of misunderstanding and accidents.

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The Insurance Institute of the United States recommends that radio headsets should not be worn by a motor vehicle operator. Some Canadian and American jurisdictions prohibit the use of radio headsets by the operator of a motor vehicle.

3. WHAT HEALTH HAZARDS DO RADIO HEADSETS CREATE?

The main health hazard from listening to a radio headset is the potential for hearing damage. The level and duration of sound are factors that affect the risk of injury to hearing, temporary or permanent.

To hear a headset, the worker sets the volume higher than background sound levels. Most headset users set the sound level one to five decibels [dB(A)] above the background sound level.* Since there is little risk of disturbing others, it is tempting to raise the volume to a higher level. One study found some levels about 17 dB(A) over background levels.

One study found that 90 percent of the levels measured inside the headphones exceeded 90 dB(A). Other studies noted that 38 percent of one group and 52 percent of another listened to music above 84 dB(A). More significantly, between 7 percent and 19 percent listened to music above 100 dB(A).

High sound levels experienced over months or years damage hearing. A worker can wear a radio headset for long periods of time because of its lightness and comfort and this increases the exposure to hearing damage.

Although not clearly understood, non-auditory health effects exist and are thought to include dizziness, nausea, and changes in the body's hormones, blood pressure and depth perception.

4. WHAT ARE THE EXPOSURE LIMITS FOR SOUND LEVELS?

Federal, provincial and territorial governments set exposure limits.

The table on page 3 lists the maximum permissible noise exposure limit, in dB(A), for Canadian jurisdictions.

A worker listening to music on a radio headset at high sound levels could receive more than the maximum permitted noise exposure well before the end of the workday. For example, under the Ontario Occupational Health and Safety Act regulations in effect June 1989, the daily maximum unprotected

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* For further information on sound levels refer to CCOHS publication, Workplace Noise and Noise Measurement--A Basic Guide.

Table - Canadian noise regulations

Jurisdiction/Province	Recommended Permissible Exposure Limits for 8 Hours (maximum)
Canada (Federal)	90
Alberta	85
British Columbia	90
Manitoba	90
New Brunswick	90
Newfoundland	85
Nova Scotia	85
Ontario	90
Ontario (draft regulation)	90
Prince Edward Island	85
Quebec	90
Saskatchewan	85
NWT	90
Yukon	85

exposure to sound levels at 100 dB(A) is two hours (per twenty-four hour period). This means that the worker listening to a radio headset at 100 dB(A) for two hours would have already received 100 percent of the maximum permissible occupational noise exposure for the full day. In addition, the worker is exposed to other workplace noise. With both the noise from the workplace and the headset, the total exposure could easily be greater than the maximum permissible exposure limit. Such exposure continued for months or years will cause hearing damage.

5. WHAT CANADIAN LEGISLATION CONTROLS RADIO HEADSET USE?

Québec, Manitoba and British Columbia specifically refer to radio headsets in legislation. In Québec, the Highway Safety Code prohibits the use of earphones by drivers of road vehicles. In Manitoba, the Highway Traffic Act goes farther, prohibiting the use of earphones by operators of both motor vehicles and bicycles on the highway.

British Columbia's Industrial Health and Safety Regulations prohibit the wearing of headsets at work. Section 13.29 states:

> Workers in any work areas shall not wear muff type hearing protectors or headsets which have been designed or modified to accept AM or FM radio or other music sources.

In Ontario, the Construction Health and Safety Branch uses a general duty clause of the Occupational Health and Safety Act to enforce the prohibition of the use of radio headsets. The section, 14(2)(g), states:

> Without limiting the strict duty imposed by subsection 1, an employer shall, take every precaution reasonable in the circumstance for the protection of a worker.

6. CONCLUSION

Radio headsets in the workplace pose risk to health and safety. They may cause hearing damage, isolate workers from the surrounding environment and distract workers' attention. Based upon these considerations, many health and safety organizations recommend that radio headsets not be worn in workplaces.

In workplaces where music is allowed, a central system is an alternative to radio headsets. With a central system the volume may be kept below hazardous levels. Emergency messages can be broadcast over the radio signal. Even central systems may still not be suitable near safety hazards like moving equipment. Of course, they too contribute to noise levels.

FURTHER READING

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